

AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT				1. Contract ID Code Cost Contract		Page 1 Of 16	
2. Amendment/Modification No. P00006		3. Effective Date 2007JUN13		4. Requisition/Purchase Req No. SEE SCHEDULE		5. Project No. (If applicable)	
6. Issued By U.S. ARMY TACOM LCMC AMSTA-AQ-ASGD SCOTT WALTER (586)574-7292 WARREN, MICHIGAN 48397-5000 HTTP://CONTRACTING.TACOM.ARMY.MIL WEAPON SYSTEM: WPN SYS: 00 EMAIL: SCOTT.WALTER@US.ARMY.MIL		Code W56HZV		7. Administered By (If other than Item 6) OFFICE OF NAVAL RESEARCH CHICAGO REGIONAL OFFICE 230 SOUTH DEARBORN STREET, ROOM 380 CHICAGO, IL 60605-1595		Code N62880	
8. Name And Address Of Contractor (No., Street, City, County, State and Zip Code) NORTHERN ILLINOIS UNIVERSITY LOWDEN HALL 301 DEKALB, IL 60115-3080 TYPE BUSINESS: Other Educational				<input type="checkbox"/>		9A. Amendment Of Solicitation No.	
				<input type="checkbox"/>		9B. Dated (See Item 11)	
				<input checked="" type="checkbox"/>		10A. Modification Of Contract/Order No. W56HZV-04-C-0783	
				<input type="checkbox"/>		10B. Dated (See Item 13) 2004OCT07	
Code 2H667		Facility Code					
11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS							
<input type="checkbox"/> The above numbered solicitation is amended as set forth in item 14. The hour and date specified for receipt of Offers <input type="checkbox"/> is extended, <input type="checkbox"/> is not extended. Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended by one of the following methods: (a) By completing items 8 and 15, and returning _____ copies of the amendments: (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.							
12. Accounting And Appropriation Data (If required) Payment will be made by Electronic Funds Transfer ACRN: AF NET INCREASE: \$5,822,000.00							
13. THIS ITEM ONLY APPLIES TO MODIFICATIONS OF CONTRACTS/ORDERS It Modifies The Contract/Order No. As Described In Item 14.							
KIND MOD CODE: G							
<input type="checkbox"/> A. This Change Order is Issued Pursuant To: _____ The Changes Set Forth In Item 14 Are Made In _____ The Contract/Order No. In Item 10A.							
<input type="checkbox"/> B. The Above Numbered Contract/Order Is Modified To Reflect The Administrative Changes (such as changes in paying office, appropriation data, etc.) Set Forth In Item 14, Pursuant To The Authority of FAR 43.103(b).							
<input checked="" type="checkbox"/> C. This Supplemental Agreement Is Entered Into Pursuant To Authority Of: mutual agreement of the parties							
<input type="checkbox"/> D. Other (Specify type of modification and authority)							
E. IMPORTANT: Contractor <input type="checkbox"/> is not, <input checked="" type="checkbox"/> is required to sign this document and return _____ copies to the Issuing Office.							
14. Description Of Amendment/Modification (Organized by UCF section headings, including solicitation/contract subject matter where feasible.) SEE SECOND PAGE FOR DESCRIPTION							
Contract Expiration Date: 2009MAY31							
Except as provided herein, all terms and conditions of the document referenced in item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.							
15A. Name And Title Of Signer (Type or print)				16A. Name And Title Of Contracting Officer (Type or print) MICHAEL L. CIONI MICHAEL.CIONI@US.ARMY.MIL (586)574-7070			
15B. Contractor/Offoror _____ (Signature of person authorized to sign)		15C. Date Signed		16B. United States Of America By _____ /SIGNED/ (Signature of Contracting Officer)		16C. Date Signed 2007JUN13	
NSN 7540-01-152-8070 PREVIOUS EDITIONS UNUSABLE				30-105-02		STANDARD FORM 30 (REV. 10-83) Prescribed by GSA FAR (48 CFR) 53.243	

CONTINUATION SHEET	Reference No. of Document Being Continued PIIN/SIIN W56HZV-04-C-0783 MOD/AMD P00006	Page 2 of 16
Name of Offeror or Contractor: NORTHERN ILLINOIS UNIVERSITY		

SECTION A - SUPPLEMENTAL INFORMATION

PURPOSE OF MODIFICATION:	Revise/change scope for Rapid Optimization of Commercial Knowledge (ROCK) for Army Vehicles
PREVIOUS NEGOTIATED CONTRACT VALUE:	\$ 5,899,708.64
NEGOTIATED VALUE THIS ACTION:	\$ 5,822,000.00
TOTAL NEGOTIATED CONTRACT VALUE:	\$11,721,708.64
PREVIOUS OBLIGATED CONTRACT VALUE:	\$ 5,899,708.64
OBLIGATED AMOUNT THIS ACTION:	\$ 5,822,000.00
TOTAL OBLIGATED CONTRACT AMOUNT:	\$11,721,708.64

1. This modification is issued out of sequence, i.e., P00006 will be issued prior to P00005.
2. The purpose of this contract modification is to incorporate revisions/changes to the Scope of Work in support of the Rapid Optimization of Commercial Knowledge (ROCK) for Army Vehicles. The following scope is added as a result of this modification:

This following Section C scope of work paragraphs are added or changed as a result of this modification:

C.2.4.3. Adds a requirement for a Low Cost Actuator System;

C.2.4.4 Adds a requirement for a Tool Change System;

C.2.4.5 Adds a requirement for a Tool Point Wear and Break Sensor;

C.2.4.6, C.2.4.6.1, and C.2.4.6.2 Adds requirements associated with a Micro Stamping Machine;

C.2.4.7 Adds a requirement for a Laser Cladding System Study

C.2.4.8, C.2.4.8.1 through C.2.4.8.5 Adds requirements associated with a Laser Technologies Survey

C.2.4.9, C.2.4.9.1 through C.2.4.9.3 Adds requirements associated with an Adiabatic Compaction System

C.2.5.4.3.1 Adds a requirement to conduct a survey of all Virtual Supply Chain Networks

C.2.5.4.3.2 Adds a requirement to take recommendations from the C.2.5.4.3.1 survey and modify the collaboration software to meet the concerns of the participating organizations

C.2.10 Addresses responsibility of Government Furnished Equipment (GFE) shipping costs

C.3.3 Adds the deliverable for Contract Data Requirement List A003 - Test Plan

C.3.4. Adds the deliverable as referenced in Section C paragraph C.2.4.9.3 for 10 12" x 12" x 1/4" tiles

C.5.1 Extends the contract period of performance to 24 months after award of P00006.
3. The following Sections of the contract are changed as a result of this modification:

CONTINUATION SHEET	Reference No. of Document Being Continued PIIN/SIIN W56HZV-04-C-0783 MOD/AMD P00006	Page 3 of 16
Name of Offeror or Contractor: NORTHERN ILLINOIS UNIVERSITY		

SECTION B:

CLIN 0001AG is added to provide additional funding in the amount of \$2,542,000.

CLIN 0001AH is added to provide additional funding in the amount of \$2,460,000.

CLIN 0001AJ is added to provide additional funding in the amount of \$820,000.

Paragraph B.3.2 is revised to address additional funding.

SECTION F:

Paragraph F.2.1 is changed as follows:

FROM:

F.2.1 The period of performance of this contract is from the date of basic contract award through 31 December 2008.

TO:

F.2.1 The period of performance of this contract is from the date of basic contract award, 7 October 2004, continuing through 24 months after award of P00006.

Paragraph F.3.1 is corrected as follows:

FROM:

Contractor's Progress, Status, and Management Report in accordance with (I/A/W) Contract Data Requirements List (CDRL) A001, Scientific and Technical Report I/A/W CDRL A002, and Conference Minutes I/A/W CDRL A003.

TO:

Contractor's Progress, Status, and Management Report in accordance with (I/A/W) Contract Data Requirements List (CDRL) A001, Scientific and Technical Report I/A/W CDRL A002, and Test Plan I/A/W CDRL A003.

SECTION G: This section is updated to incorporate the applicable accounting data.

SECTION H:

Paragraph H.1 is changed as follows:

FROM:

H.1 SUBCONTRACTING PLAN:

The contractor's revised subcontracting plan dated 6 May 2005 and found acceptable by the Small Business Administration on 11 May 2005 is in possession of the parties hereto, and is incorporated in contract by reference.

H.1.1 The contractor's revised subcontracting plan dated 13 March 2006 and found acceptable by the Small Business Administration on 14 March 2006 is in possession of the parties hereto, and is incorporated in contract by reference.

TO:

H.1 SUBCONTRACTING PLAN:

The contractor's revised subcontracting plan dated 19 Apr 2007 and found acceptable by the Small Business Administration on 4 May 2007 is in possession of the parties hereto, and is incorporated in contract by reference.

Paragraph H.2 and subparagraphs H.2.1, H.2.2, H.2.3, and H.2.4 are added to address Government Furnished Property (GFP) added to this contract as a result of this modification.

CONTINUATION SHEET	Reference No. of Document Being Continued		Page 4 of 16
	PIIN/SIIN W56HZV-04-C-0783	MOD/AMD P00006	
Name of Offeror or Contractor: NORTHERN ILLINOIS UNIVERSITY			

SECTION J:

CDRL A001 and A002 are updated to include current information necessary for CDRL submittal.

Contract Data Requirement List (CDRL) A003 is added for the delivery of a Test Plan.

4. As a result of this modification the amount of the contract is increased by \$5,822,000 from \$5,899,708.64 to \$11,721,708.64. Except as provided herein, all other terms and conditions of Contract W56HZV-04-C-0783 remain unchanged.

*** END OF NARRATIVE A0006 ***

Name of Offeror or Contractor: NORTHERN ILLINOIS UNIVERSITY

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
	SECTION B - SUPPLIES OR SERVICES AND PRICES/COSTS				
0001	<div>SERVICES LINE ITEM</div> <div>SECURITY CLASS: Unclassified</div>				
0001	<div>Supplies or Services and Prices/Costs</div> <div>SERVICES LINE ITEM</div> <div>SECURITY CLASS: Unclassified</div> <div>Contractor shall furnish all the supplies and services to accomplish the task specified in Section C, Scope of Work for the Rapid Optimization of Commercial Knowledge effort</div> <div>Total Est. Cost: \$11,721,708.64</div> <div>Period of Performance: Date of basic contract award continuing through 24 months after award of P00006</div> <div>INSPECTION/ACCEPTANCE: DESTINATION</div> <div>FOB: DESTINATION</div> <div>(End of narrative B001)</div>				
0001AG	<div>SERVICES LINE ITEM</div> <div>NOUN: ROCK</div> <div>PRON: R372C117R3PRON AMD: 01ACRN: AF</div> <div>AMS CD: 63300553D00</div> <div>Inspection and Acceptance</div> <div>INSPECTION: DestinationACCEPTANCE: Destination</div> <div>Deliveries or Performance</div> <div>DLVR SCHPERF COMPL</div> <div>REL CDQUANTITYDATE</div> <div>0010SEE SECTION F</div> <div>\$2,542,000.00</div>				\$2,542,000.00
0001AH	<div>SERVICES LINE ITEM</div> <div>NOUN: FY07 NORTHERN IL UNIV. 4N61</div> <div>PRON: R372C118R3PRON AMD: 03ACRN: AF</div>				\$2,460,000.00

Name of Offeror or Contractor: NORTHERN ILLINOIS UNIVERSITY

ITEM NO	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
	AMS CD: 63300553D00 <u>Inspection and Acceptance</u> INSPECTION: DestinationACCEPTANCE: Destination <u>Deliveries or Performance</u> DLVR SCHPERF COMPL <u>REL CD</u> <u>QUANTITY</u> <u>DATE</u> 0010SEE SECTION F \$2,460,000.00				
0001AJ	<u>SERVICES LINE ITEM</u> NOUN: FY07 NORTHERN IL UNIV. 4N63 PRON: R372C119R3PRON AMD: 03ACRN: AF AMS CD: 63300553D00 <u>Inspection and Acceptance</u> INSPECTION: DestinationACCEPTANCE: Destination <u>Deliveries or Performance</u> DLVR SCHPERF COMPL <u>REL CD</u> <u>QUANTITY</u> <u>DATE</u> 0010SEE SECTION F \$820,000.00				\$820,000.00

CONTINUATION SHEET	Reference No. of Document Being Continued		Page 7 of 16
	PIIN/SIIN W56HZV-04-C-0783	MOD/AMD P00006	
Name of Offeror or Contractor: NORTHERN ILLINOIS UNIVERSITY			

B.1 Estimated Cost and Payment

B.1.1 The estimated cost for performance of the work required under this contract is \$11,721,708.64 which shall constitute the estimated cost for the purpose of the Contract Clause Section I entitled LIMITATION OF FUNDS (FAR 52.232-22).

B.1.2 Allowable cost shall be determined, and payment thereof shall be provided, in accordance with the Contract Clause Section I entitled ALLOWABLE COST AND PAYMENT (FAR 52.216-7).

B.2 Payment

The contractor may submit public vouchers bi-monthly for payment under this contract. The Paying Office shall disburse funds in accordance with the the special billing instructions at paragraph G.1 of the contract.

B.3 FUNDING

B.3.1 The Government will provide funds under this Contract covering the estimated cost on an incremental basis as provided for in the following funding schedule and pursuant to the Contract Clause entitled Limitation of Funds. It is estimated that the incremental amounts are sufficient for the performance of work in each of the cited periods. The Government may, at its discretion, allot such funds on an incremental basis within each fiscal year. The Contractor shall so plan and execute the work required by this contract as to expend and/or commit funds compatible with the schedule set forth below. Whenever the Contractor has reason to believe that the funds allotted to this Contract for any cited period are either insufficient or excessive for the performance of work required in that cited period, the Government shall be so notified.

B.3.2 Funding Schedule

CONTRACT REFERENCE	CLIN	PERIOD	OBLIGATED	PRON	CONTRACT ACTION TOTAL
Basic	0001AA	FY04	\$1,100,000	R342C308R3EH	\$1,100,000
Mod P1	0001AB	FY04	\$ 213,165	R342C59CR3EH	
Mod P1	0001AC	FY05	\$ 366,835	R352C150R3EH	\$ 580,000
Mod P2	0001AC	FY05	\$1,900,500	R352C150R3EH	
Mod P2	0001AD	FY05	\$1,349,643	R352C149R3EH	\$3,250,143
Mod P4	0001AE	FY05	\$ 850,000.00	R352C446R3EH	
Mod P4	0001AF	FY06	\$ 119,565.64	R362C146R3EH	\$ 969,565.64
Mod P6	0001AG	FY07	\$2,542,000.00	R372C117R3	
Mod P6	0001AH	FY07	\$2,460,000.00	R372C118R3	
Mod P6	0001AJ	FY07	\$ 820,000.00	R372C119R3	\$5,822,000.00
TOTAL					\$11,721,708.64 =====

The cumulative amount obligated on this Contract is currently \$11,721,708.64.

*** END OF NARRATIVE B0001 ***

CONTINUATION SHEET	Reference No. of Document Being Continued PIIN/SIIN W56HZV-04-C-0783 MOD/AMD P00006	Page 8 of 16
Name of Offeror or Contractor: NORTHERN ILLINOIS UNIVERSITY		

SECTION C - DESCRIPTION/SPECIFICATIONS/WORK STATEMENT

C.1. NOT USED

C.2 Scope of Work and Performance Requirements

C.2.1 The contractor, acting as an independent contractor and not as an agent of the Government, shall provide the necessary personnel, facilities, materials and services to complete the effort described below.

C.2.2 The scope of this effort is to reduce cost and increase efficiencies in manufacturing processes for military applications. The contractor shall perform sections C.2.3, C.2.4, C.2.5, C.2.6, C.2.7, C.2.8, and C.2.9 as individual projects, within this scope.

C.2.3 The contractor shall perform a cost benchmarking study comparing the cost commercial heavy tracked vehicles to the cost of heavy combat vehicles. This study shall compare the business practices of commercial producers to the business practices of military system producers and focus only on common components. The components will be chosen from a wide spectrum of functionality, design, and manufacturing strategies.

C.2.3.1 The contractor, for this study, shall have a sample size of no less than 50 common or similar components. The statistical data shall have a 95% confidence interval, with one degree of freedom. These components shall be simple vehicle hardware components.

C.2.3.2 Based upon an analysis of the data collected, the contractor shall make recommendations on the root cause of military component vs. commercial component cost discrepancies.

C.2.3.3 The cost benchmarking study shall be completed no later than fourteen months after contract award (see CDRL A002 and Data Item Description (DID) DI-MISC-80711(T).

C.2.4 The contractor shall present several production improvement process projects. From that list the COR will perform a down select to three production improvement process projects. The down select will be based upon technology readiness and critical need for the Army. The down select to three projects shall take place within three months of contract award.

C.2.4.1 The Contractor shall execute selected, C.2.4, production improvement process projects following the down select by the COR. Each project shall be completed within 11 months after down select. Each production improvement process project shall follow sections C.3.1 and C.3.2 for all reporting.

C.2.4.2 The Contractor shall recommend eight (8) additional production improvement process projects at the first scheduled quarterly review after award of contract modification P00002. From this list of eight, the COR will select five additional production improvement process projects within a week of that meeting. These five additional production improvement process projects shall follow the timeline and reporting structure stated in C.2.4.1.

C.2.4.2.1 In addition to the selected projects in C.2.4.2, the contractor shall perform three process improvement projects in the areas of: improved single quantity manufacturing technologies; overnight casting molds; and increased delivery speeds of tool and die sets. The contractor shall follow the timeline and reporting structure stated in C.2.4.1. Each project shall be completed within 31 months after basic contract award. Each production improvement process project shall follow sections C.3.1 and C.3.2 for all reporting.

C.2.4.3 Low Cost Actuator System: The contractor shall design and build a prototype low cost actuator system. This newly designed actuator system shall replace the actuator system that currently exists on a three axis micro machine. This new, more cost efficient actuator system shall have all the same functionality of the existing actuator system. The contractor shall use a fluidic based system. The objective of this task is to reduce actuator costs for micro machines. The Government Contracting Officer Representative (COR) will approve the design within three weeks of receipt. Upon COR approval of design, the contractor shall build prototype.

C.2.4.4 Tool Change System: The contractor shall design and build a prototype tool change system for a three axis micro machine. This tool change system shall have a capacity of holding 6 cutting tools at one time. The tool change system shall be computer controlled and the only acceptable human inference is the initial loading and unloading of tools from the changer. During micro machine operation the system shall be able to change out the cutting tool with the changer automatically. The Government COR will approve the design within three weeks of receipt. Upon COR approval of design, the contractor shall build prototype.

C.2.4.5 Tool Piont wear and Break Sensor: The contractor shall develop a tool point wear and break sensor to detect a 5% or greater loss of a cutting tool due to wear. The Government COR will approve the design within three weeks of receipt. Upon COR approval of design, the contractor shall build prototype.

C.2.4.6 Micro Stamping Machine: The contractor shall design a prototype micro-stamping machine. This micro-stamping machine shall be able to stamp titanium up to a thickness of .002, minimum size of .001 x .001 to a maximum size of .1" x .1".

C.2.4.6.1 The contractor shall submit the proposed micro-stamping machine design to the Government within 8 months of modification P00006. The Government COR will approve the design within three weeks of design receipt.

CONTINUATION SHEET	Reference No. of Document Being Continued		Page 9 of 16
	PIIN/SIIN W56HZV-04-C-0783	MOD/AMD P00006	
Name of Offeror or Contractor: NORTHERN ILLINOIS UNIVERSITY			

C.2.4.6.2 The contractor shall build a prototype micro stamping machine per the approved design in C.2.4.6.1.

C.2.4.7 Laser Cladding System Study: The contractor shall conduct a cost benefit study of using the laser cladding system as a replacement to current commercial plating processes used to deposit Cadmium, Chromium, Nickel, and Zinc.

C.2.4.8 Laser Technologies Survey: The contractor shall conduct a survey of Commercial off the Shelf (COTS) Laser technologies to identify whether high speed laser technologies can be used to heat ceramic material while the ceramic material is undergoing conventional machining. The Contractor shall document survey findings and develop a test plan based on these findings. The Government COR will approve the test plan within three weeks of receipt. This task shall be completed within 4 months of the award of modification P00006.

C.2.4.8.1 The contractor shall execute approved test plan from C.2.4.8, This task shall be completed with 6 months of the issue of P00006.

C.2.4.8.2 Using the data collected from the execution of the test plan, C.2.4.8, the contractor shall survey COTS machine tools that could be refitted with tested laser systems to achieve the goal of reduced cycle time during machining. The machine tool must have Computer Numeric Control (CNC) control, and minimum of 20 slots available in the tool changer. The contractor shall report refitting options and recommend a machine tool and laser system design. The Government COR will approve the machine tool and laser system integration design within three weeks of receipt of report.

C.2.4.8.3 Machining and Laser Heating (MLH) System: The contractor shall build the machining and laser heating (MLH) system from the approved design from C.2.4.8.2.

C.2.4.8.4 The contractor shall recommend and the COR will select 4 ceramic materials to serve as a baseline for the development of system parameters for MLH system. The contractors recommendations shall be submitted to the COR for approval within 7 months of the issue of P00006.

C.2.4.8.5 The contractor shall develop a test plan for the evaluation of the effectiveness of the MLH system. The test plan shall test the feed rate and tool wear for materials selected in C.2.4.8.4, in selected machining operations. The contractor shall conduct the same tests on the MLH both using and not using the laser heating system, to provide comparison data. The machining operations will consist of milling, drilling, chamfering, outside radius surface removal, inside radius surface removal, and flat surface removal.

C.2.4.9 Adiabatic Compaction System: The contractor shall study and report on technologies that can compact titanium based powders through adiabatic compaction, into tile. Based on the findings of this study and within 3 months of the award of modification P00005, the contractor shall present a proposal for adiabatic compaction capable of compacting titanium powder into tiles of 97% density with a minimum size of 6x6x1. The COR will review this proposal and approve the proposal within three weeks of receipt of the proposal. In accordance with the approved proposal, the contractor shall build the necessary tooling to use an adiabatic compaction system for the production of prototype tile samples for metallurgical testing. The contractor shall complete necessary tooling within 4 months of the award of modification P00006.

C.2.4.9.1 The contractor shall build enough 12" x 12" x 1/4" samples of 97% or higher density to produce all the necessary samples for the testing objectives identified in C.2.4.9.2.

C.2.4.9.2 Once the technical objective in C.2.4.9.1 is met or exceeded, the contractor shall produce enough tiles to meet the testing objectives below.

TEST TYPE	STANDARD DRAWING	SPECIMEN CONFIG (in)			TEST CONDITIONS	TEST PER THERMAL PROCESS				TOTAL TESTS
		Len/Hgt	Width	Thickness		Plate	None	HIP	1400F/2h	
Tension	ASTM E8	2.5	0.5	0.25	Room Temperature	1	5	5	5	15
Stress-Life										
Fatigue	ASTM E466	5.0	0.5	0.25	Room Temperature					
					* R = -1 (Peak stress = 80ksi)	1	5	5	5	15
						2	10	10	10	30

*R is stress reversal. R= -1 which means the stress in the specimen will alternate from 80ksi tensile to -80ksi (compression)

The contractor shall test, compile, and write a report using the data collected from the above testing objectives. The contractor shall complete this task within 12 months of the issue of P00006.

C.2.4.9.3 The contractor shall build an additional 10 12" x 12" x 1/4" tiles. The contractor shall complete this task within 12 months of the issue of P00006.

CONTINUATION SHEET	Reference No. of Document Being Continued PIIN/SIIN W56HZV-04-C-0783 MOD/AMD P00006	Page 10 of 16
Name of Offeror or Contractor: NORTHERN ILLINOIS UNIVERSITY		

C.2.5 The contractor shall develop, implement, and demonstrate a Virtual Supply Chain Network working within the greater Rockford, IL community. The contractor shall select 19 (up from 5 under basic contract) organizations (Manufacturing Companies, consortiums, other Universities, etc.) to participate in this effort. To complete Virtual Supply Chain Network the contractor shall follow the outline below:

C.2.5.1 The contractor shall conduct a situational analysis for each participating organization. This consists of reviewing a participating organization's customer service processes, material management, transportation, warehousing, and inventory systems. Also, the contractor shall review participating organizations' external relationships with suppliers and customers. Finally, the contractor shall review each participating technological capabilities.

C.2.5.2 Based upon the results of the review conducted in C.2.5.1, the contractor shall look to implement lean efforts within and between individual and participating organizations. Those lean efforts shall fall along the following areas: material planning and scheduling, purchase order cycle, inbound transportation, material receipt and inspection, manufacturing processes, and custom order processing.

C.2.5.3 The contractor shall develop a performance measurement system for the Virtual Supply Chain Network. The system must provide the measurements of order fulfillment, customer satisfaction, order fulfillment lead-time, product quality, product quantity, and total costs. Additional performance measurements may be implemented at the discretion of the contractor.

C.2.5.4 To implement the Virtual Supply Chain Network, the contractor shall complete the following tasks with participating organizations and companies.

C.2.5.4.1 The contractor shall connect the EIGERLab (the EIGERLab is an NIU asset) facility and all participating companies to the local fiber optic ring.

C.2.5.4.2 The contractor shall set up the EIGERLab facility as a demonstration site for the Virtual Supply Chain Network, e-commerce software, and other partner's internet based manufacturing.

C.2.5.4.3 The contractor shall select a commercial off the shelf software system for every participating organization to use for the Virtual Supply Chain Network collaboration. This system shall allow participating companies to leverage each other to reduce manufacturing cycle costs and time; material ordering, bid quoting, and engineering services.

C.2.5.4.3.1 The contractor shall conduct a survey of all Virtual Supply Chain Network partners to determine the effectiveness and areas for improvement in the system. This task shall be completed within 3 months of the award of modification P00006.

C.2.5.4.3.2 The contractor shall take recommendations from the survey conducted in C.2.5.4.3.1 and modify the collaboration software to meet the concerns of the participating organizations.

C.2.5.4.4 The contractor shall train all participating organizations on how to use the selected software from section C.2.4.5.3.

C.2.5.4.5 The contractor shall demonstrate Virtual Supply Chain Network collaboration by bidding on and receiving orders to build 7 (up from 2 under basic contract) components from the Defense Logistics Agency or any Department of Defense part need.

C.2.5.4.6 The contractor shall complete all tasks in section C.2.5 within thirty nine months from the start of the original contract.

C.2.6 The Contractor shall perform a benchmarking study of Department of Defense component wear on systems caused by abrasive and/or corrosive environments. Special emphasis shall be given to areas where use of coatings is likely to provide significant cost benefits.

C.2.6.1 The Contractor shall complete on-site corrosion and wear surveys and/or discussions with three Army Arsenal, Army Depots, and a Navy or Air Force rework facilities. The study shall focus on the extent of wear or corrosion damage to systems found during rebuild, nature of wear or corrosion, cost impact of the wear and corrosion, and areas of disproportionate costs of wear and corrosion (particularly for weapon or transport systems used in Middle East).

C.2.6.2 The contractor shall begin the task in Section C.2.6 thirty (30) days after award of contract modification P00002 and complete within 7 months of award.

C.2.7 From the findings in C.2.6, the contractor shall recommend four product improvement projects to the COR. The COR will approve multiple projects, with the total project effort not to exceed 900 engineering hours and 2000 laboratory technician hours.

C.2.7.1 The contractor shall start work on the task in Section C.2.7 thirty (30) days after the completion of section C.2.6 and shall complete the work within 10 months after the start date.

C.2.8 The contractor shall perform an applied research study of diamond and diamond like coatings. The purpose of this study shall be to determine the properties of diamond and diamond like coatings and from that data determine the potential cost savings of using these

CONTINUATION SHEET	Reference No. of Document Being Continued PIIN/SIIN W56HZV-04-C-0783 MOD/AMD P00006	Page 11 of 16
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Name of Offeror or Contractor: NORTHERN ILLINOIS UNIVERSITY

coating systems in military applications. Diamond and diamond like coatings could reduce O&S costs by reducing the replacement rate for high wear components.

C.2.8.1 The contractor shall start work on the task in Section C.2.8 thirty (30) days after the completion of section C.2.6 and shall complete the work within 10 months after the start date.

C.2.9 The contractor shall perform an applied research study of nano machining fluids. Nano machining fluids have the potential to reduce manufacturing costs by eliminating standard cutting fluids and could reduce wear in high wear component applications. The purpose of this study shall be to determine the properties of nano machining fluids and from that data determine the potential cost savings of using these coating systems in military applications.

C.2.9.1 The contractor shall start work on the task in Section C.2.9 thirty (30) days after the completion of section C.2.6 and shall complete the work within 10 months after the start date.

C.2.10 The contractor shall be responsible for the pick up, shipping, and set up of all Government Furnished Equipment (GFE) identified in paragraph H.2 of contract.

C.3 Deliverables

C.3.1 The contractor shall electronically deliver a monthly Contractor's Progress, Status and Management Report (see CDRL A001 and DID DI-MGMT-80227(T)).

C.3.2 The contractor shall electronically deliver a Scientific and Technical Report (see CDRL A002 and DID DI-80711(T)).

C.3.3 The contractor shall electronicall deliver a Test Plan (see CDRL A003 and DI-NDTI-80566)

C.3.4 The contractor shall deliver to the government ten (10) tiles as described in paragraph C.2.4.9.3.

C.4 Meetings

C.4.1 Start of Work/Kick-Off Meeting. Within 3 weeks after basic contract award and award of Modification P00002, or mutually agreed to by parties, the contractor shall coordinate the scheduling of, and conduct, a Start of Work meeting. The Start of Work meeting will be held in a medium agreeable to both parties. At the Start of Work meeting, the contractor shall lay out his plan of action, including milestones, for the accomplishment of the contract tasks.

C.4.2 The contractor shall present quarterly technical reviews at the contractor's site. The contractor shall present the first quarterly technical review three months after basic contract with subsequent reviews every 90 days thereafter. The purpose of each technical review, which is expected to last no more than one workday, is for the contractor to present the current status of effort on the contract, to include milestones achieved, problems encountered, and solutions employed or planned to be employed. The contractor shall arrange with the COR for an appropriate date for each quarterly technical review.

C.5 Period of Performance

C.5.1 The period of performance for this contract, including the completion and submission of all reports, is from the basic contract award date continuing through 24 months after the award of Modification P00006.

C.6 CONTRACTOR MANPOWER REPORTING (CMR)

The Office of the Assistant Secretary of the Army (Manpower & Reserve Affairs) operates and maintains a secure Army data collection site where the contractor will report ALL contractor manpower (including subcontractor manpower) required for performance of this contract. The contractor is required to completely fill in all the information in the format using the following web address: <https://contractormanpower.army.pentagon.mil>. The required information includes:

- (1) Contracting Office, Contracting Officer, Contracting Officer's Technical Representative;
- (2) Contract number, including task and delivery order number;
- (3) Beginning and ending dates covered by reporting period;
- (4) Contractor name, address, phone number, e-mail address, identity of contractor employee entering data;
- (5) Estimated direct labor hours (including sub-contractors);
- (6) Estimated direct labor dollars paid this reporting period (including sub- contractors);
- (7) Total payments (including sub-contractors);
- (8) Predominant Federal Service Code (FSC) reflecting services provided by contractor (and separate predominant FSC for each sub-contractor if different);
- (9) Estimated data collection cost;
- (10) Organizational title associated with the Unit Identification Code (UIC) for the Army Requiring Activity (the Army Requiring Activity is responsible for providing the contractor with its UIC for the purposes of reporting this information);

CONTINUATION SHEET	Reference No. of Document Being Continued		Page 12 of 16
	PIIN/SIIN W56HZV-04-C-0783	MOD/AMD P00006	

Name of Offeror or Contractor: NORTHERN ILLINOIS UNIVERSITY

- (11) Locations where contractor and sub-contractors perform the work (specified by zip code in the United States and nearest city, country, when in an overseas location, using standardized nomenclature provided on website);
- (12) Presence of deployment or contingency contract language; and
- (13) Number of contractor, and sub-contractor employees deployed in theater this reporting period (by country).

As part of its submission, the contractor will also provide the estimated total cost (if any) incurred to comply with this reporting requirement. Reporting period will be the period of performance not to exceed 12 months ending September 30 of each government fiscal year and must be reported by 31 October of each calendar year. Contractors may use a direct XML data transfer to the database server or fill in the fields on the website. The XML direct transfer is a format for transferring files from a contractor's systems to the secure web site without the need for separate data entries for each required data element at the web site. The specific formats for the XML direct transfer may be downloaded from the web site.

*** END OF NARRATIVE C0001 ***

CONTINUATION SHEET	Reference No. of Document Being Continued		Page 13 of 16
	PIIN/SIIN W56HZV-04-C-0783	MOD/AMD P00006	
Name of Offeror or Contractor: NORTHERN ILLINOIS UNIVERSITY			

SECTION F - DELIVERIES OR PERFORMANCE

F.1.1 Data

F.1.2 The delivery schedule for the data items is found on Exhibit A, The Contract Data Requirements List (DD Form 1423).

F.1.3. All data deliverables under this contract shall be delivered electronically to the email addresses specified in the Contract Data Requirements List (CDRL) DD Form 1423.

F.2 Period of Performance

F.2.1 The period of performance of this contract is from the date of basic contract award continuing through 24 months after award of P00006.

F.3 All hardcopy documents shall be shipped FOB Destination to the following address:

U.S.Army TACOM
Attn: AMSRD-TAR-N/MS 272 (Mr. Aaron D. Hart)
6501 E. 11 Mile Road
Warren, MI 48397-5000

F.3.1 The contractor shall deliver the following:

Contractor's Progress, Status, and Management Report in accordance with (I/A/W) Contract Data Requirements List (CDRL) A001, Scientific and Technical Report I/A/W CDRL A002, and Test Plan I/A/W CDRL A003.

*** END OF NARRATIVE F0001 ***

SECTION G - CONTRACT ADMINISTRATION DATA

LINE	PRON/ AMS CD/ ITEM MIPR	OBLG STAT/ ACRN JOB ORD NO	PRIOR AMOUNT	INCREASE/DECREASE AMOUNT	CUMULATIVE AMOUNT
0001AG	R372C117R3 63300553D00	AF 2 72C117	\$ 0.00	\$ 2,542,000.00	\$ 2,542,000.00
0001AH	R372C118R3 63300553D00	AF 2 72C118	\$ 0.00	\$ 2,460,000.00	\$ 2,460,000.00
0001AJ	R372C119R3 63300553D00	AF 2 72C119	\$ 0.00	\$ 820,000.00	\$ 820,000.00
NET CHANGE			\$	5,822,000.00	

SERVICE NAME	NET CHANGE BY ACRN	ACCOUNTING CLASSIFICATION	ACCOUNTING STATION	INCREASE/DECREASE AMOUNT
Army	AF	21 72040000076N6N7EP6330052512 S20113	W56HZV	\$ 5,822,000.00
NET CHANGE				\$ 5,822,000.00

PRIOR AMOUNT OF AWARD	INCREASE/DECREASE AMOUNT	CUMULATIVE OBLIG AMT
NET CHANGE FOR AWARD: \$ 5,899,708.64	\$ 5,822,000.00	\$ 11,721,708.64

ACRN	EDI ACCOUNTING CLASSIFICATION
AF 21 070820400000 S20113 76N6N7E63300553D002512	72C117S20113 W56HZV
AF 21 070820400000 S20113 76N6N7E63300553D002512	72C118S20113 W56HZV
AF 21 070820400000 S20113 76N6N7E63300553D002512	72C119S20113 W56HZV

CONTINUATION SHEET	Reference No. of Document Being Continued PIIN/SIIN W56HZV-04-C-0783 MOD/AMD P00006	Page 15 of 16
Name of Offeror or Contractor: NORTHERN ILLINOIS UNIVERSITY		

SECTION H - SPECIAL CONTRACT REQUIREMENTS

H.1. SUBCONTRACTING PLAN

The contractor's revised subcontracting plan dated 24 May 2007 and found acceptable by Small Business Administration on 24 May 2007 is in the possession of the parties hereto, and is incorporated in contract by reference.

H.2 Government-Furnished Property (GFP)

H.2.1 The Government may furnish, from time to time, such items of Government-owned property as the Contracting Officer's Technical Representative (COTR) deems necessary in order to assist the Contractor in the performance of this Contract.

H.2.2 Upon completion of the Contract, or in the event of the termination (either partial or complete), all Government-owned property, including both property furnished to the Contractor and property acquired by the Contractor for the account of the Government, which will have become surplus or excess to any remaining Contract requirements, shall be reported immediately by the Contractor to the Contracting Officer at the U.S. Army Tank-Automotive Command, ATTN: AMSTA-AQ-ABGD, Warren, MI 48397-5000 for redistribution, shipping instructions, release for disposal, or other actions.

H.2.3 Specific GFP to be provided is as follows:

Quantity: 1
Nomenclature: Magnetic particle System
Manufacturer: Magne-Tech
Model Name/Number: 3404-B
Serial Number: 82007
Acquisition Value: \$21,288
Acquisition Date: 1982

The following GFP represents the components of the 3-D Stereo Lithography System:

<u>Quantity</u>	<u>Nomenclature</u>	<u>Manufacturer</u>	<u>Model Name/Number</u>	<u>Serial Number</u>	<u>Acquisition Value</u>	<u>Acquisition Date</u>
1	Bead Blaster	Econoline	n/a	00-089	\$ 1,000	16 Aug 00
1	Main Computer	Dell	Optiplex GX 110	BY1220B	\$ 4,000	16 Aug 00
1	Chiller	Lytton	RC030J02BE2C001	719229-03	\$ 10,000	16 Aug 00
1	Air Cleaner	Donaldson; Torit Div	64 CAB	IG608423-003-3	\$ 2,500	16 Aug 00
1	Control Computer	MiTAC	MCH-202	9204-20080	\$ 3,000	16 Aug 00
1	Computer Tower/Case	Rittal	4603 703	7140	\$ 2,000	16 Aug 00
1	Scanner/Main Machine	DTM	Sinterstation 2500 plus	7140-SS2500	\$ 250,000	16 Aug 00
1	Vacuum cleaner	Minuteman	800220	S8002200811	\$ 350	16 Aug 00

H.2.4 Title to all GFP shall remain with the Government in accordance with FAR Clause 52.245-5, as incorporated into this Contract by reference.

*** END OF NARRATIVE H0001 ***

CONTINUATION SHEET	Reference No. of Document Being Continued		Page 16 of 16
	PIIN/SIIN W56HZV-04-C-0783	MOD/AMD P00006	
Name of Offeror or Contractor: NORTHERN ILLINOIS UNIVERSITY			

SECTION J - LIST OF ATTACHMENTS

<u>List of</u> <u>Addenda</u>	<u>Title</u>	<u>Date</u>	<u>Number</u> <u>of Pages</u>	<u>Transmitted By</u>
Exhibit A	CONTRACT DATA REQUIREMENTS LIST (DD 1423)		002	EMAIL

CONTRACT DATA REQUIREMENT LIST

Form Approval OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 440 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503. Please DO NOT RETURN your form to either these addresses. Send completed form to the Government Issuing Contracting Officer for the Contract/PR No. listed in Block E.

A. CONTRACT LINE ITEM NO.: D. SYSTEM/ITEM.....: ROCK
B. EXHIBIT : A E. CONTRACT/PR NO.:W56HZV-04-C-0783
C. CATEGORY.....: F. CONTRACTOR.....:Northern Illinois University

1. DATA ITEM NO.: A001
2. TITLE OF DATA ITEM : Contractor's Progress Status and Management Report
3. SUBTITLE

4. AUTHORITY: DI-MGMT-80227(T) (see 16a. below)
5. CONTRACT REFERENCE: C.3.1
6. REQUIRING OFFICE .: AMSRD-TAR-N / MS 272 9. DIST. STATEMENT REQUIRED: 12. DATE OF FIRST SUB: 30 DAC
7. DD250 REQ: LT 10. FREQUENCY : Monthly 13. DATE OF SUBS. SUB:
8. APP CODE: N/A 11. AS OF DATE:

14. DISTRIBUTION ADDRESSEES: SUBMIT REPORTS ELECTRONICALLY TO THE E-MAIL ADDRESSES SHOWN IMMEDIATELY BELOW:

AARON HART, CONTRACTING OFFICER'S REPRESENTATIVE, E-MAIL: aaron.d.hart@us.army.mil
SALLY PETROUS, CONTRACT SPECIALIST, E-MAIL: sally.petrous@us.army.mil

15. TOTAL:

16. REMARKS:

a. DI-MGMT-80227 is tailored by deleting 10.2, 10.3(i), 10.3(j) 10.3(k), and 10.3(l).

1. DATA ITEM NO.: A002
2. TITLE OF DATA ITEM : SCIENTIFIC AND TECHNICAL REPORTS
3. SUBTITLE:

4. AUTHORITY: DI-MISC-80711(T) (see 16a. below)
5. CONTRACT REFERENCE: C.3.2
6. REQUIRING OFFICE .: AMSRD-TAR-N / MS 272 9. DIST. STATEMENT REQUIRED: 12. DATE OF FIRST SUB: SEE ITEM 16
7. DD250 REQ: DD 10. FREQUENCY : SEE ITEM 16 13. DATE OF SUBS. SUB: SEE ITEM 16
8. APP CODE: A 11. AS OF DATE:

14. DISTRIBUTION ADDRESSEES: SUBMIT REPORTS ELECTRONICALLY TO THE E-MAIL ADDRESSES SHOWN IMMEDIATELY BELOW:

AARON HART, CONTRACTING OFFICER'S REPRESENTATIVE, E-MAIL: aaron.d.hart@us.army.mil
SALLY PETROUS, CONTRACT SPECIALIST, E-MAIL: sally.petrus@us.army.mil

15. TOTAL:

16. REMARKS:

a. DI-MISC-80711 is tailored by deleting 10.2

b. The Draft of the Scientific and Technical Report shall be delivered twenty-three (23) months after date of Modification P00006 award. The Government will review and respond within 15 days of receipt. The contractor shall submit the Final Scientific and Technical Report within 15 days after receipt of draft comments/approval.

17. PRICE GROUP: 18. ESTIMATED TOTAL PRICE :

1. DATA ITEM NO.: A003
2. TITLE OF DATA ITEM : TEST PLAN
3. SUBTITLE:

4. AUTHORITY: DI-NDTI-80566
5. CONTRACT REFERENCE: C.2.4.8, and C.3.3
6. REQUIRING OFFICE .: AMSRD-TAR-N / MS 272 9. DIST. STATEMENT REQUIRED: 12. DATE OF FIRST SUB: SEE ITEM 16
7. DD250 REQ: DD 10. FREQUENCY : SEE ITEM 16 13. DATE OF SUBS. SUB: SEE ITEM 16
8. APP CODE: A 11. AS OF DATE:

14. DISTRIBUTION ADDRESSEES: SUBMIT REPORTS ELECTRONICALLY TO THE E-MAIL ADDRESSES SHOWN IMMEDIATELY BELOW:

AARON HART, CONTRACTING OFFICER'S REPRESENTATIVE, E-MAIL: aaron.d.hart@us.army.mil
SALLY PETROUS, CONTRACT SPECIALIST, E-MAIL: sally.petrus@us.army.mil

15. TOTAL:

16. REMARKS:

a. This test plan shall be subject to review and feedback by the Contracting Officer Representative (COR). The COR will approve the test plan within three (3) weeks of receipt. The contractor shall execute test plan and complete test plan within six (6) months of the issue date of P00006.

17. PRICE GROUP: 18. ESTIMATED TOTAL PRICE :